

CLAIMS:

1. A process for regenerating a spent aromatics alkylation or transalkylation catalyst comprising a molecular sieve, the process comprising the steps of contacting the spent catalyst with an oxygen-containing gas at a temperature of about 120 to about 600°C and then contacting the catalyst with an aqueous medium.
2. The process of claim 1 wherein said aqueous medium is selected from the group consisting of an ammonium nitrate solution, an ammonium carbonate solution and an acetic acid solution.
3. The process of claim 1 wherein the step of contacting the catalyst with an aqueous medium is conducted at a temperature of about 15 to about 120°C for a period of about 10 minutes to about 48 hours.
4. The process of claim 1 wherein, after contacting with the aqueous medium, the catalyst is calcined at a temperature of about 25 to about 600°C for a period of about 10 minutes to about 48 hours.
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5. A process for alkylating an aromatic compound comprising the steps of:
- (a) contacting an alkylatable aromatic compound and an alkylating agent with an alkylation catalyst comprising a molecular sieve under alkylation conditions; and
  - (b) when said alkylation catalyst has become at least partially deactivated, contacting said alkylation catalyst with an oxygen-containing gas at a temperature of about 120 to about 600°C; and then
  - (c) contacting the catalyst from step (b) with an aqueous medium.
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6. The process of claim 5 wherein the contacting step (a) is conducted in the liquid phase.

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7. The process of claim 5 wherein the alkylating agent includes an alkylating aliphatic group having 1 to 5 carbon atoms.

5 8. The process of claim 5 wherein the alkylating agent is ethylene or propylene and the alkylatable aromatic compound is benzene.

10 9. The process of claim 5 wherein the molecular sieve of the alkylation catalyst of step (a) is selected from MCM-22, PSH-3, SSZ-25, MCM-36, MCM-49, MCM-56, faujasite, mordenite and zeolite beta.

15 10. The process of claim 5 wherein said aqueous medium is selected from the group consisting of an ammonium nitrate solution, an ammonium carbonate solution and an acetic acid solution.

20 11. The process of claim 5 wherein the step of contacting the catalyst with an aqueous medium is conducted at a temperature of about 15 to about 120°C for a period of about 10 minutes to about 48 hours.

12. The process of claim 5 including the further step, after step (c), of calcining the catalyst at a temperature of about 25 to about 600°C for a period of about 10 minutes to about 48 hours.